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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/523,085	02/02/2005	Hiroo Muramoto	20241/0202402-US0	8505

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EXAMINER	
BERNSHTEYN, MICHAEL	
ART UNIT	**PAPER NUMBER**
1796	
MAIL DATE	**DELIVERY MODE**
04/09/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/523,085	MURAMOTO ET AL.	
	Examiner	Art Unit	
	Michael Bernshteyn	1713	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 May 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *02 February 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action follows a response filed on May 30, 2007. Claims 18 and 29 have been cancelled; no claims have been amended or added.

2. In view of the amendment(s), the rejection of claim 28 and 29 under 102(b) as being anticipated by Nakanishi et al. (U. S. Patent 6,096,234) has been withdrawn.

3. Claims 1-27 are pending.

Claim Rejections - 35 USC § 103

4. The text of this section of Title 35 U.S.C. not included in this action can be found in a prior Office Action.

5. Claims 1-27 are rejected under 35 U.S.C. § 103(a) as being unpatentable as obvious over Khan et al. al. ("ABA triblock comb copolymers with oligo(oxyethylene)side chains as matrix for ion transport", Makromoleculare Chemie, 190, 1069-1078 (1988)) in view of Giles et al. (U. S. Patent 5,196,484), for the rationale recited in paragraph 1 of Office Action dated on March 8, 2007.

It is worth to mention that the courts have held, as found *In re Wilder*, 563 F.2d 457, 461, 195 USPQ 426, 430 (CCPA 1977), that the compounds which "are generally of sufficiently close structural similarity that there is a presumed expectation that such compounds possess similar properties" ("When chemical compounds have very close' structural similarities and similar utilities, without more a *prima facie case* may be made."). See MPEP 2144.08.

Response to Arguments

6. Applicants traverse the rejection under 35 U.S.C. § 103(a) of claims 1-27 as being unpatentable over Khan et al. ("ABA triblock comb copolymers with oligo(oxyethylene)side chains as matrix for ion transport", Makromoleculare Chemie, 190, 1069-1078 (1988)) in view of Giles et al. (U. S. Patent 5,196,484).

7. As to the Applicant's arguments that the motivation does not support the Examiner's position, and Giles reaches that short oxyalkane sequences, i.e. low values of m, are desirable to reduce crystallization (page 9, 2nd paragraph), it is noted that instantly claimed block chain A also could contain low values of m beginning with number 2. Therefore, one having ordinary skill in the art would rearrange the Khan ABA block to reduce crystallization.

8. In response to applicant's arguments against the references individually (page 10, 1st paragraph), one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

9. With regard to the Applicant's argument that the rearrangement is contrary to the teaching of Khan because Khan teaches that "the incorporation of polystyrene block lowers the conductivity by an order of magnitude relative to that found for the homopolymer" (page 9, the last paragraph), it is noted that it was made rejection under 35 U.S.C. 103(a) in view of two references, but not under 35 U.S.C. 102(b) only in view of Khan's reference.

The only difference between Khan's triblock comb copolymer and the claimed composition is the sequence of a block chains A, B and C: in the claimed composition the block chain A is in the middle while in Khan's copolymers it is located in the ends.

Giles et al discloses ABA triblock polymers, the A block being rigid having a transition away from its rigid phase above 70°C, the B block being wholly or partly ion-coordinating, elastomeric or amorphous, the B/A block length ratio being greater than 1. When the B block is complexed with an ionic salt these polymers act as polymeric electrolytes, which may be used in cells etc. Preferred polymers are those where HC=CH sites in the polybutadiene segment of a polystyrene-polybutadiene-polystyrene polymer are replaced by $–CH_2CH–X–(CH_2CH_2O)_m–R$, where X is link, R is alkyl. A preferred salt is $LiCF_3SO_3$ (abstract).

Giles discloses that the B-blocks are ion-coordinating, and the atom in the B-block responsible for ion-coordination is oxygen in an oxyalkane sequence containing 2 to 6 carbon atoms between neighbouring oxygen atoms. Preferably, the oxyalkane sequence is a polyoxyethylene sequence, i.e.: $-(CH_2-CH_2O-)_m-$ where m is an integer. The ion-coordinating B-block is elastomeric or amorphous. It is therefore desirable to have only short oxyalkane sequences so as to reduce the amount of ambient temperature crystallisation. Alternatively, when m is rather high, B-block plasticisers may be mixed with or blended with the polymer, for example low mass (less than ca 800) polyethylene glycol dimethyl ether. Preferably, the value of m should lie in the range 2-22, for example 7-17, which is within the claimed range according with the limitations of claims 7-8 and 21-22 (col. 4, line 66 through col. 5, line 15).

Both references are analogous art because they are from the same field of endeavor concerning new triblock copolymers for solid polymer electrolytes.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate polymethacrylate with oligo(oxyethylene) block in the middle as taught by Giles in Khan's triblock comb copolymers in order to reduce the amount of ambient temperature crystallization (US'484, col. 5, lines 9-10), and thus to arrive at the subject matter of instant claims 1-3, 7-8, 16-17, 21-22 and 27.

10. In response to applicant's argument that the superior conductive properties of the presently claimed solid polymer electrolyte is evidence of its nonobviousness and nothing in the teaching of Khan or Giles would lead one having ordinary skill in the art to expect the result as obtained (page 10, 2nd paragraph; page 11, 1st paragraph), it is worth to mention that Khan discloses that the ion conduction can reach values of 10^{-4} $\Omega^{-1}.cm^{-1}$ at 70°C, depending on salt and styrene content (abstract).

11. Therefore, the rejection under 35 U.S.C. 103(a) has not been withdrawn and remains in force.

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Bernshteyn whose telephone number is 571-272-2411. The examiner can normally be reached on M-F 8-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on 571-272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Randy Gulakowski/
Supervisory Patent Examiner, Art Unit 1796

Michael Bernshteyn
Patent Examiner

Art Unit 1713

MB
08/20/2007

Application Number	Application/Control No.	Applicant(s)/Patent under Reexamination	
	10/523,085	MURAMOTO ET AL.	
	Examiner	Art Unit	
	Michael Bernshteyn	1713	